

S/N 10/565911

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Kamaguchi	Examiner:	Soroush, Ali
Serial No.:	10/565911	Group Art Unit:	1616
Filed:	May 3, 2006	Docket No.:	08279.1042USWO
Title:	HEAT RESISTANT CAPSULE AND PROCESS FOR PRODUCING THE SAME		

CERTIFICATE UNDER 37 CFR 1.6(d):

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on April 26, 2010.

By:

*Carrie Vanderlinde*  
Name: ~~Justine L. Suleski~~ Carrie Vanderlinde

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request. The review is requested for the reasons stated on the attached sheets titled "Reasons In Support Of Pre-Appeal Brief Request for Review".

This request is being filed with a notice of appeal.

Respectfully submitted,

HAMRE, SCHUMANN, MUELLER &  
LARSON, P.C.  
P.O. Box 2902  
Minneapolis, MN 55402-0902  
(612) 455-3800

By:

*Douglas P. Mueller*  
Douglas P. Mueller  
Reg. No. 30,300  
DPM/llf

Dated: April 26, 2010

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	KAMAGUCHI	Examiner:	SOROUGH, ALI
Serial No.:	10/565911	Group Art Unit:	1616
Filed:	January 25, 2006	Docket No.:	08279.1042USWO
Title:	HEAT RESISTANT CAPSULE AND PROCESS FOR PRODUCING THE SAME		

CERTIFICATE UNDER 37 CFR 1.6(d):

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on April 26, 2010.

By:   
Name: Carrie Vanderlinde

REASONS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop: AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Commissioner:

Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal.

This Pre-Appeal Brief Request for Review is in response to the Advisory Action, dated March 30, 2010, in which the rejections of claims 1-2 and 4-10 in the final Office Action dated November 24, 2009 were maintained.

Claims 1 and 2 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (U.S. 5,330,835) in view of Yamamoto et al. (U.S. 5,431,917).

Claims 1 and 2 are directed to a heat resistant capsule where curdlan is used as a capsule covering film matrix of the capsule covering film and contained at an amount of 80% by weight or more relative to a total weight of the capsule covering film matrix.

Kikuchi discloses a seamless capsule which comprises a hydrophilic substance and a film for coating the hydrophilic substance (see Abstract and col. 1, lines 53-55). As

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noted in the rejection, Kikuchi does not disclose the use of curdlan for the capsule covering film matrix of the seamless capsule as required in claims 1 and 2.

Yamamoto discloses a hard capsule which is comprised of a water-soluble cellulose derivative as a capsule base, an auxiliary for gelation, and a gelatinizing agent. Yamamoto discloses that curdlan can be used as the gelatinizing agent and contained in ranges of 0.1 to 0.5% by weight (col. 3, lines 29-32). Yamamoto further discloses producing a hard capsule wherein 0.15 to 0.3 parts by weight of the gelatinizing agent is used (Claim 9, col. 8, lines 28-30). Yamamoto in no way suggests that curdlan be used as a matrix material of the capsule shell in an amount of at least 80% by weight, as required in claims 1 and 2, and in fact teaches maximum amounts that are more than an order of magnitude lower than the minimum in claims 1 and 2.

Therefore, even by combining Kikuchi and Yamamoto, a capsule does not contain curdlan at an amount of 80% by weight or more relative to a total weight of the capsule covering film matrix as required by claims 1 and 2 and the references cannot meet this limitation. Applicant respectfully requests the rejection be withdrawn for at least the foregoing reasons.

Claims 4-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (U.S. 5,330,835) in view of Kiefer et al. (U.S. 6,174,466) further in view of Kamaguchi et al. (WO 03/043609). Applicants respectfully traverse this rejection.

Claim 4 is directed to a process for producing a heat resistant capsule, and requires simultaneously extruding a capsule filler solution through the first nozzle, a capsule covering film solution, containing curdlan, through the second nozzle, and an oil solution, at a temperature of 20 to 65 °C, through the third nozzle to form a composite jet, and releasing the composite jet into a heated oil solution having a temperature of 80 °C or more.

Claim 5 is similar to claim 4 except there are four nozzles, instead of three, such that a capsule covering film solution is extruded through the third nozzle, and an oil solution, at a temperature of 20 to 65 °C, is extruded through the fourth nozzle.

A problem associated with using curdlan is that during production of the capsule, gelling and plugging of the nozzles occurs when curdlan solution is extruded in a

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solidifying solution from the nozzles. The present invention solves this problem by having oil flow, at a temperature of 20 to 65 °C, through the third nozzle in claim 4 and the fourth nozzle in claim 5, thereby maintaining the capsule droplet in a low set condition known as "thermal reversible low set gel", which occurs at temperatures below 80 °C and prevents gelling of the curdian and plugging near the outlet of the nozzles. The resulting composite jet is fed to a heated oil solution maintained at a temperature of 80 °C or higher. As the capsule droplet leaves the nozzles, it solidifies in a high set gel condition known as "thermal irreversible high set gel", which occurs at temperatures of 80 °C or higher, thereby forming a curdian capsule. None of the references teach or suggest providing an oil flow within the nozzle and outside the capsule film covering solution at a lower temperature than the heated oil solution.

Kikuchi discloses a seamless capsule that comprises a hydrophilic substance and a film for coating the hydrophilic substance (see Abstract and col. 1, lines 53-55). Kikuchi discloses that the seamless capsule is produced by three nozzles and uses the third nozzle for the shell composition, and does not provide a nozzle for an oil solution as required in claims 4 and 5. Kikuchi discloses injecting the jet into a vegetable oil bath of 12 °C (col. 4, lines 61-62), which is a much lower temperature than the 80 °C required for the heated oil solution in claims 4 and 5. Therefore, Kikuchi fails to provide a nozzle for an oil solution that is at a lower temperature than that of the heated oil solution, and Kikuchi's heated oil solution is kept at much less than 80 °C.

Similarly, Kamaguchi discloses that a seamless capsule can be produced by a multiple nozzle, which is a doublet or more (col. 5, lines 46-53). Kamaguchi discloses releasing the jet stream, consisting of the shell composition and the capsule content, from the nozzle into a cooling solution of a vegetable oil at a temperature of not more than 20 °C to obtain the capsule (col. 6, lines 23-29). Therefore, Kamaguchi likewise fails to suggest the use of a nozzle for an oil solution at a temperature lower than that of the heated oil solution, and Kamaguchi's heated oil solution also is kept at much less than 80 °C.

Kiefer discloses a method for making seamless capsules. Kiefer also discloses using a concentrically aligned nozzle system having an outer nozzle 105 and an inner nozzle 106 (col. 5, lines 50-51) where the inner nozzle 106 supplies the core material and

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the outer nozzle 105 supplies the shell material (col. 5, lines 52-56). However, neither nozzle supplies the oil solution at a temperature as recited in claims 4 and 5 and Kiefer does not remedy the failure of Kikuchi and Kamaguchi to disclose a nozzle supplying oil outside the nozzle supplying the capsule film matrix.

Moreover, with respect to the oil bath temperature in Kiefer, a first, upper duct 108 extends from the multiple nozzle system 100 and the coaxial jet of the shell material and the core material is introduced into a flow of a heated carrier liquid, at 100 °C. Then the capsules are transported into a cooled liquid, of 0 to 30 °C, in a second duct 110 (claim 1, col. 9, line 67 to col. 10, line 4, col. 10, lines 5-8 and Fig. 1). This is opposite of what is required in claims 4 and 5, where the capsules first are exposed to the lower temperature oil from the third or fourth nozzle and then exposed to the higher temperature oil.

Therefore, even if the features of Kikuchi, Kiefer and Kamaguchi are combined, they fail to meet the limitation of an oil solution, at a temperature of 20 to 65 °C, through the third nozzle of claim 4 or the fourth nozzle of claim 5. As a matter of fact, none of the references have any nozzle that contains an oil solution, at a temperature of 20 to 65 °C. And, none of the references disclose an oil solution within the nozzle at a lower temperature than the heated oil solution outside of the capsule composition.

The Examiner has argued that one skilled in the art would adjust the temperature of the heated oil solution such that it would not result in curing of the curdlan in the nozzle of the composite jet. However, the heated oil solution needs to permit curing of the capsule shell to provide the desired products. Adjustment of the temperature of the heated oil solution, without the additional limitation of an oil solution, at a temperature of 20 to 65 °C, through the third nozzle of claim 4 or the fourth nozzle of claim 5, would result in curing of the curdlan in the nozzle thus resulting in a plugged nozzle. Thus, there is not proper motivation for making this modification and the Examiner has failed to show proper motivation. The rejection of claims 4 and 5 should be withdrawn.

Claims 6-8 and 9-10 are allowable at least by virtue of their respective dependence on independent claims 4 and 5 and the rejection these claims should be withdrawn. Applicants do not concede the correctness of the rejection.

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Favorable reconsideration and withdrawal of the rejection are respectfully requested.

In view of the above remarks, Applicants respectfully request favorable reconsideration of this application in the form of a Notice of Allowance. If any questions arise regarding this communication, the Examiner is invited to contact Applicants' representative listed below.

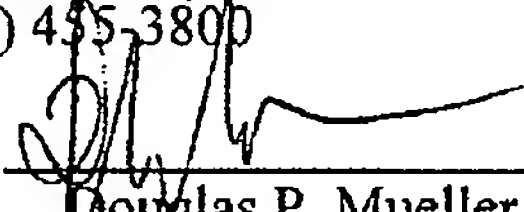


Dated: April 26, 2010

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HAMRE, SCHUMANN, MUELLER &  
LARSON, P.C.

P.O. Box 2902  
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(612) 455-3800

By:   
Douglas P. Mueller  
Reg. No. 30,300  
DPM/llf/jls